



CONSTGLASS



Table of results



### 1-Pilot object

**Pilot object:**

Canterbury Cathedral nII 7  
Decorative border

**Picture**



**Identification of the panel:**

nII 7 internal face in transmitted and reflected light.

**Treatment:**

**Product:** Microcrystalline Wax no: 1129.

**Application:** Microcrystalline Wax diluted with white spirit.

Applied with a bush and mechanically polished.



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**2-Results**

**sample reference:**

CAN nII 7

Questions	Techniques	Answers
<p><b>Morphology</b></p> <p><i>What is the physical appearance/condition of the wax?</i></p> <p><i>Has the wax penetrated into the surface of the glass?</i></p>	<p><b>Optical Microscope</b></p>	<p>The wax appears to be intact – mechanical polishing marks still visible. A light layer of accumulated dust on wax surface. Appears to remain transparent. Mild surface sheen when illuminated by reflective cold light. Paint appears solid and in good condition under the wax</p>
	<p><b>SEM</b></p>	<p>n/a</p>
	<p><b>Nano Tomography</b></p> 	
	<p><b>Tomography on Synchrotron</b></p>	
<p><b>Chemical Composition</b></p> <p><i>What is the chemical composition of the applied mixture of waxes and solvent mix?</i></p>	<p><b>SEM</b></p>	<p>Fraunhofer Institute results: Found microcrystalline wax 1129 only in wax shavings sent from panel nII 7.</p>
<p><b>Organic component composition</b></p> <p><i>Has the wax degraded or changed in any way?</i></p>	<p><b>FTIR</b></p>	<p>n/a</p>
	<p><b>RAMAN</b></p>	<p>n/a</p>
<p><b>Microbiology</b></p> <p><i>Is there/ has there been any microbial activity on the wax surface?</i></p>	<p><b>Metabolic activity and taxonomical description of microorganisms</b></p>	<p><b>CAN nII 10 (in situ)</b></p> <ul style="list-style-type: none"> <li>- low metabolic activity (ATP 164 RLU/25 cm<sup>2</sup>);</li> <li>- isolated microorganisms: <i>Aspergillus fumigatus</i>, <i>Aspergillus versicolor</i>, <i>Cladosporium sphaerospermum</i> (fungi; medium contamination).</li> </ul> <p><b>CAN nII 6 (in storage)</b></p> <ul style="list-style-type: none"> <li>- low metabolic activity (ATP 158 RLU/25 cm<sup>2</sup>);</li> <li>- no microorganisms isolated.</li> </ul>



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**Reversibility**

*How can I remove the wax without damage to the paint layer?*

*What method and solvent can I use?*

*Do we need to reverse the wax? The wax is stable and the panel is protected with protective glazing.*

*Does the dichloromethane solvent react with the glass, glass corrosion and deposits, putty or lead and how?*

*How do I remove all trace of the solvent?*



Wax coating under optical microscope before reversibility test

**Test studies Elimination**



Sample area

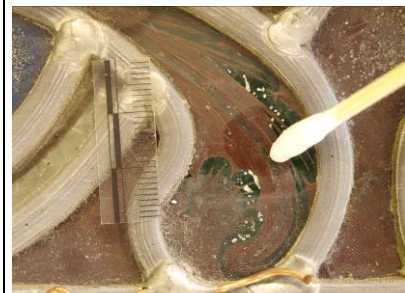
Area tested: wax layer on top of stable paint

**Dichloromethane compress and swabs**

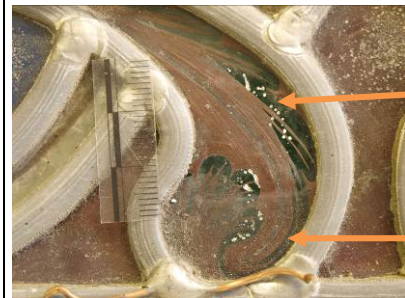
**Compress**  
Duration: 2 mins +

Results: removed the wax but left a slight residue, the absorbent pad formed white crystals after their use. Wax residue was removed with a swab moistened in dichloromethane.

Cotton wool swabs: 30 seconds; 10 seconds using swab moistened with dichloromethane and a further 2 swabs to remove residue. White crystals formed on the surface of the swabs after their use. Is there a reaction to the cotton wool? Or has the solvent evaporated and left chlorine residue? Under magnification there appears to be no residue of the dichloromethane and no softening of the surrounding putty on the glass.



Reversibility test with dichloromethane swabs



Selected area for reversibility test

**Re-treatability**

*Should I retreat the paint if the wax is removed?*

**Test studies Re-treatability**

No need. No treatment recommended.



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Before reversibility test in reflected light



After reversibility test on the left side